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ABSTRACT

This report describes the plans and objectives of a project to improve school facilities planning by investigating alternative planning strategies and training selected educational planners from around the U.S. During the first year of the project, emphasis will be placed on basic research into the process of educational facilities planning. Results of this investigation will be used to develop and field test an operational simulation model during the second year. Activities during the third year will include disseminating the more effective planning models developed during the project and training a selected group of facility planners from across the country. Later sections of the report list project staff members and specific activities planned for the first year of the project. (Author/JG)

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SIMU-SCHOOL: THE CHICAGO COMPONENT

A Definition, Tasks, Staffing Reference Paper

by
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of
Simulation Models for Planning Educational Facilities (Simu-School) Study
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SIMU-SCHOOL: THE CHICAGO COMPONENT

A Definition, Tasks, Staffing Reference Paper

I. INTRODUCTION

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The importance of planning for school facilities need hardly be labored. Despite the fact that school construction (including modernization of existing facilities) represents an annual expenditure of around $7 billion, a serious shortage of educational facilities continues to exist. Furthermore, the existing facilities are quickly made inadequate and obsolete by a rapidly growing population and changing educational programs. Such a challenge requires that a far greater emphasis be placed on planning for schools than has been the case to date, and necessitates the development of improved techniques specially designed for educational planning.

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The Simu-School project of the Chicago Board of Education, funded by the U.S. Office of Education under Title III for an amount of $100,000 for the first year (July 1971 - June 1972), will be directed at the task of improving the process of educational facilities planning. Particular emphasis will be placed on developing simulation models of the planning process and devising computerized information systems.

II. SIMU-SCHOOL DEFINED

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The term "Simu-School" refers to a proposed school planning center designed to bring a variety of people --educators, teachers, urban planners, architects, parents, and other concerned citizens together in a joint effort to plan for new forms of education in their community. It was conceived by members of the Committee on Architecture for Education of the American Institute of Architects and has the backing of the Council of Educational Facility Planners.

The center will utilize a variety of data inputs and communication aids such as slides, graphs, maps, discussion, games, role-play, etc., and may employ a computer which will be used to simulate events that the planners might encounter were they to make certain decisions. Thus, through rapid feed-back, the participants can immediately assess the future implications of any decisions they make.

Simu-School will serve two main functions: (1) the investigation of alternative strategies in an actual planning project, and (2) the training of educational planners.

III. A NATIONAL SIMU-SCHOOL PROJECT

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Project Simu-School, as originally proposed, is to be a national project with a number of different centers participating. As of now, the Chicago Board of Education is the only center to have been funded; however, funds are being actively solicited by a number of other centers and it is hoped that the Santa Clara County Board of Education will soon be funded for Simu-School research. Therefore, plans have been made to co-ordinate research activities of the Chicago and Santa Clara County groups under the direction of a proposed National Advisory Board. In addition, plans have been made for the dissemination of research findings under the auspices of the Council of Educational Facility Planners (CEFP).

A graphic description of the national Simu-School organization is provided on the following page.

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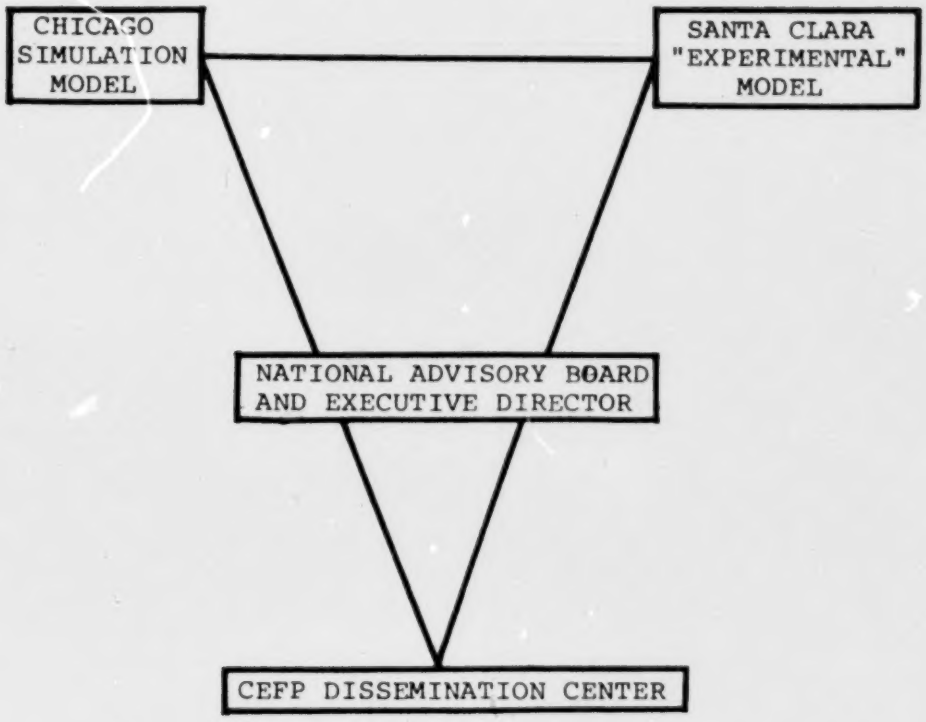
CHICAGO SIMULATION MODEL
SANTA CLARA "EXPERIMENTAL" MODEL
NATIONAL ADVISORY BOARD AND EXECUTIVE DIRECTOR
CEFP DISSEMINATION CENTER

The National Advisory Board will consist of the following:

1. Supt. (or designated representative) Chicago
2. Supt. (or designated representative) Santa Clara County
3. Commissioner of Education (or designated representative)
4. Architect No. 1
5. Architect No. 2
6. Architect No. 3
7. Executive Secretary, CEFP
8. Educator - User, Rural-Suburban
9. Educator - User, Urban
10. Executive Director

IV. THE CHICAGO COMPONENT

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The first phase of the research planned under the Simu-School project of the Chicago Board of Education will extend over a period of three years. During the first year, emphasis will be placed on some basic research into the process of educational facilities planning, the results of which will provide a basis for developing operational simulation models during the subsequent years.

The proposed program will have five major activities during the first year:

(1) A critical review of the educational planning process in order to undertake an intensive study of the methodological and informational requirements for more effective planning.

(2) Identification of the structure of a school district simulation model for estimating the demand for educational services.

(3) The development of a prototype "game" for use in illustrating the process of educational facilities planning.

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(4) A preliminary development of a facilities planning sub-system of a Management Information System.

(5) The development of position papers on some key aspects of facilities planning, e.g. student flows, cost-benefit analysis of alternative facility solutions, allocation of mobile units, charettes, program evaluation techniques, etc.

Activities in Year Two will be devoted mainly to the development and field testing of an operational simulation model. Year Three will be used to nationally disseminate the more effective planning models and to train a group of facility planners selected from across the country.

It should be noted that while the research described in this section will be carried out in the Chicago area specifically for the Chicago School System, the resulting methodology will be general and will be readily adaptable to any other area.

V. TASK PRODUCTS, YEAR ONE

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A number of research reports will be published during the first year dealing with selected aspects of facilities planning in addition to periodic documents describing the progress and the evaluation of on-going research. In particular, the following specific tasks will be undertaken:

(1) A national selective search of research and development projects, simulation projects, management information systems, systems planning projects, etc. which have direct relationships to the development of Simu-School.

(2) The development of a conceptual model of the educational planning process.

(3) Identification of the structure of a school district simulation model for estimating the demand for educational services. The proposed model will relate a variety of environmental characteristics such as land-use, transportation facilities, recreation areas, housing, etc., with demographic variables such as population density, its distribution, socio-economic characteristics,

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migration patterns, and so on. (The "macro" model.)

(4) The generation of educational specifications of a specific school facility by relating such policy considerations as enrollment, class size, and curricular program with design characteristics such as space available, its allocation by functional areas, and the layout. (The "micro" model.)

(5) A preliminary development of a facilities planning sub-system of a Management Information System including a detailed specification of the types of information necessary and available and recommendations for their collection, storage, and retrieval.

(6) The development of a prototype "game" for use in illustrating the process of educational facilities planning.

(7) Case studies of selected school districts in Chicago to investigate the relationship between student enrollment and changes in a variety of environmental characteristics (e.g. the addition of an expressway or changes in land-use zoning). The studies will

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not only help identify the structure of a school district simulation model, but also provide some indication of the variables and parameters governing student enrollment.

(8) The development of models of student flows including

(a) a mathematical framework for analysing and modeling student flows, and

(b) an empirical study using actual data from the Chicago School System.

The parameters of student flows provided by the above models will form an extremely important input to the school district simulation model.

(9) Initiation of research projects of relevance to some key aspects of facilities planning, e.g. allocation of mobile units, design of model libraries, the use of charettes in community participation, program evaluation and review techniques, etc. The result of this task will be a series of position papers.

(10) The completion of a study on comparative costs and benefits of alternative facility solutions such as

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modernization, rentals, relocatables, joint occupancy, instant schools, etc.

(11) The development of preliminary educational specifications and preliminary architectural design for a Chicago-based Simu-School and a facility planning center. (Function, activities, layout, etc.)

(12) A review of Simu-School progress to date and the identification of the directions for future research.

VI. STAFF, YEAR ONE

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The project will be under the general direction of the Assistant Superintendent of Facilities Planning who will coordinate research activities of staff members drawn primarily from the Departments of Facilities Planning and Operations Analysis of the Chicago Board of Education. In addition, recognized experts will be brought in on an ad hoc basis to advise staff and every effort will be made to coordinate project research activities with those of other agencies such as the Chicago Department of Development and Planning and the Department of Urban Renewal.

The immediate participants will include the following:

1.	Project Director:	Dr. Joseph P. Hannon Facilities Planning
2.	Chief Consultant:	Dr. Donald J. Leu San Jose State College
3.	Project Consultant:	Dr. Eileen C. Stack Operations Analysis
4.	Project Consultant:	Dr. Eric G. Moore Northwestern University
5.	Project Associate:	Mr. Lutaf A. Dhanidina Operations Analysis

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6.	Project Associate:	Mr. John W. Feldballe Operations Analysis
7.	Project Associate:	Miss Sheila E. Goldman Operations Analysis
8.	Project Associate:	Mr. Thomas S. Teraji Facilities Planning
9.	Research Associate:	Mr. Ashraf S. Manji Facilities Planning
10.	Research Assistant:	Miss Carolyn J. Goshen Facilities Planning

Except for the Research Associate and the Research Assistant who will work full-time on the project, the participants will devote a variable amount of time on an "as needed" basis.

VII. SIMU-SCHOOL PUBLICATIONS

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During the first year, a limited number of Simu-School publications will be made available - free of charge - to interested readers. If you would like to be placed on our mailing list, please send your name and address to the following address:

The Publications Secretary
Project Simu-School, Room 615
The Chicago Board of Education
228 North LaSalle Street
Chicago, Illinois 60601